

New U.S. Application
PRELIMINARY AMENDMENT

IN THE CLAIMS:

Please cancel claims 1-12, and add new claims 13-24, as shown below in the detailed listing of all claims which are, or were, in this application:

Claims 1-12 (canceled).

13. (New) A device intended to deliver an alarm signal upon detection of a gravitational wave generated by a body falling into a swimming pool, which comprises a means of sensing aquatic waves that is placed beneath the surface of the water of the swimming pool, a means of converting the aquatic waves sensed by said sensing means into an analogue electrical signal (S1), and a differential detector that includes comparison means for comparing a sensitivity threshold value of said differential detector with the value of said analogue electrical signal and to deliver said alarm signal when said analogue electrical signal exceeds said sensitivity threshold value, said differential detector comprising autoregulation means which includes an analogue/digital converter that receives said preamplified analogue electrical signal as input and delivers a digital signal (S2) as output when a disturbance in

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the water occurs, a comparator, the positive (+) input of which receives said preamplified analogue electrical signal, and a microprocessor programmed to deliver, in response to the detection of said digital signal delivered by said converter, a digital signal (S3) to the negative (-) input of said comparator, the output pulses (S4) of which have a variable width, which increases with the duration and with the magnitude of said disturbance so as to automatically increase the threshold for tripping an alarm means and therefore to reduce the sensitivity of the device when said sensing means detects an atmospheric disturbance, such as wind;

wherein said device microprocessor triggers said alarm means when the width (TS4) of the output pulses (S4) from said comparator is larger than a predetermined critical reference (REF) and wherein the frequency F of said analogue electrical signal lies between two predetermined values F1 and F2.

14. (New) The device of claim 13, in which said microprocessor assigns a sensitivity level (NS) to the device, said sensitivity level being incremented by 2 when the frequency F of said analogue electrical signal does not lie between said predetermined values F1 and F2 when the width (TS4) of the output pulses (S4) from said

comparator is larger than said predetermined critical reference (REF).

15. (New) The device of claim 14, in which said sensitivity level is incremented by 2 by said microprocessor when the width (TS4) of the output pulses (S4) from said comparator lies between a second predetermined minimum reference (REF2) and said predetermined critical reference (REF).

16. (New) The device of claim 14, in which said sensitivity level is incremented by 2 by said microprocessor when the value of the output pulses (S4) from said comparator is equal to 0, while the value of the digital signal (S2) output by said analogue/digital converter is not equal to 0 and when the width (TS2) of said digital signal is smaller than a first predetermined minimum reference (REF1).

17. (New) The device of claim 16, in which said differential detector furthermore includes an auto regulation counter that is actuated in order to decrement from a predetermined capacitance down to 0 or to increment from 0 up to said predetermined

capacitance when, with the value of the output pulses (S4) from said comparator being equal to 0, the value of the digital signal output by said analogue/digital converter is not equal to 0 and its width (TS2) is smaller than said first minimum reference(REF1).

18. (New) The device of claim 15, in which said differential detector furthermore includes an autoregulation counter that is actuated by said microprocessor in order to decrement from a predetermined capacitance down to 0 or increment said predetermined capacitance from 0 (counter=0) when, the value of the output pulses (S4) from said comparator being different from 0, their width (TS4) is smaller than said second predetermined minimum reference (REF2).

19. (New) The device of claim 17, in which said counter is not actuated for decrementing or incrementing (counter=0) when the value of the output pulses (S4) from said comparator is equal to 0 and the value of the digital signal (S2) output by said analogue/digital converter is equal to 0.

20. (New) The device of claim 19, in which, when it turns out that said autoregulation counter has finished decrementing or

incrementing (counter=1), said sensitivity level (NS) is decremented by 1 by said microprocessor and said counter is again actuated for decrementing or incrementing (counter=0).

21. (New) The device of claim 13, further comprising an autocalibration counter that is actuated by said microprocessor in order to decrement from a specified capacitance down to 0 or to increment from 0 up to said capacitance (counter=0), an autocalibration of the device being carried out when said counter has finished decrementing or incrementing (counter=1).

22. (New) The device of claim 21, in which the value of said signal (S3) delivered to the negative (-) input of said comparator results from the charging of a capacitor by pulses delivered by said microprocessor during a time interval N, the autocalibration consisting in incrementing the value of N by 1 over a specified period as long as the values of the digital signal (S2) output by said analogue/digital converter and of the output pulses (S4) from said comparator are equal to 0.

23. (New) The device of claim 22, in which the value of N is decremented by 5 when the value of the digital signal (S2) output by said analogue/digital converter is equal to 0 while the value of the output pulses (S4) from said comparator is different from 0.

24. (New) The device of claim 13, wherein said predetermined frequencies F1 and F2 are equal to 0.8 Hz and 1.2 Hz respectively.